

We claim:

1. A process for preparing meta- or para-xylylenediamine, comprising the steps of ammoxidizing meta- or para-xylene to iso- or terephthalonitrile, by contacting the 5 vaporous product of the ammoxidation stage directly with a liquid organic solvent (quench), and hydrogenating the phthalonitrile in the resulting quench solution or suspension, wherein the organic solvent is N-methyl-2-pyrrolidone (NMP).
- 10 2. The process according to claim 1 for preparing meta-xylylenediamine, comprising the steps of ammoxidizing meta-xylene to isophthalonitrile and hydrogenating the isophthalonitrile.
- 15 3. The process according to either of claims 1 and 2, wherein, before the hydrogenation of the phthalonitrile, water and any products having a boiling point lower than phthalonitrile (low boilers) are partly or fully removed by distillation from the resulting quench solution or suspension.
- 20 4. The process according to any of the preceding claims, wherein, before the hydrogenation of the phthalonitrile, there is no removal of products having a boiling point higher than phthalonitrile (high boilers) from the resulting quench solution or suspension.
- 25 5. The process according to any of the preceding claims, wherein the ammoxidation is carried out at temperatures of from 300 to 500°C over a catalyst comprising V, Sb and/or Cr, as an unsupported catalyst or on an inert support.
- 30 6. The process according to any of the preceding claims, wherein the temperature of the quench effluent in the quench with NMP is from 40 to 180°C.
7. The process according to any of the preceding claims, wherein the hydrogenation is carried out in the presence of ammonia.
- 35 8. The process according to any of the preceding claims, wherein the hydrogenation is carried out at temperatures of from 40 to 150°C over a catalyst comprising Ni, Co and/or Fe, as an unsupported catalyst or on an inert support.
- 40 9. The process according to any of the preceding claims, wherein, after the hydrogenation, the xylylenediamine is purified by distilling off NMP, any ammonia, and also any relatively low-boiling by-products, via the top and distillatively removing relatively high-boiling impurities via the bottom.

10. The process according to any of the preceding claims, wherein, after the hydrogenation, the NMP, any ammonia, and also any relatively low-boiling by-products, are distilled off via the top and, afterwards, any relatively high-boiling impurities are removed from the xylylenediamine by distillation via the bottom.
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11. The process according to either of the two preceding claims, wherein the xylylenediamine, after the distillation, is extracted for further purification with an organic solvent.
- 10 12. The process according to the preceding claim, wherein cyclohexane or methylcyclohexane are used for the extraction.